

Type. Young adult male. B.M. no. 18. 11. 11. 68. Original number 247. Collected 2nd July, 1918.

This species is clearly most closely allied to *C. bergi*, but is distinguished by the characters above described. From *C. tucumanus*, its next neighbour northwards, as also from *C. mendocinus* to the south, it is readily separated by its much smaller size and the darkened upper surface of the muzzle.

"Lives in very dry red earth."—*E. B.*

Named in honour of Gen. Foch, by whose genius victory in the recent great struggle has been so greatly accelerated.

9. *Marmosa elegans pallidior*, Thos.

♂. 253, 257, 273; ♀. 289.

The white middle area of the belly is quite as in the "Acochayas" of Bolivia and of Umahuaca, Jujuy, those of Tucuman and Leon, Jujuy (*M. e. cinderella*) having slaty-grey bases to the ventral hairs.

"Caught among the rocks."—*E. B.*

XI.—*Descriptions and Records of Bees.*—LXXXIII.

By T. D. A. COCKERELL, University of Colorado.

Proteraner rhois, Cockerell.

Male, Meadow Valley, Mexico (*Townsend*).

New to Mexico.

Sphecodes mexicanorum, sp. n.

♀.—Length about 8.5 mm.

Black, with the abdomen red, the first segment with a large black area occupying the base and extending more than halfway to apex in middle, the third and fourth segments with a black stain in middle, the fifth and apical segments black. Head and thorax with dull white hair; mandibles dark reddish apically, with a blunt inner tooth far from apex; labrum short, simple, transversely sulcate; antennæ entirely dark; clypeus strongly punctured; front finely and densely punctured; mesothorax and scutellum strongly punctured, but shining, the punctures quite widely separated on disk; area of metathorax shining, with about twelve strong longitudinal plicæ; posterior face of metathorax very coarsely

punctured; tegulae rufo-fuscous. Wings dusky, stigma and nervures dark brown. Legs very dark reddish brown; spurs ferruginous. Abdomen not appreciably constricted between first and second segments; first segment impunctate, the following with extremely fine punctures in the basal region; apical segments with hoary pubescence.

Meadow Valley, Mexico (*C. H. T. Townsend*). U.S. Nat. Museum.

In my table in *Ann. & Mag. Nat. Hist.*, Nov. 1907, this runs to *S. dichrous*, Smith, from which it is readily known by the impunctate first abdominal segment and other characters. On account of the thin hoary pubescence on apical part of abdomen it recalls *S. pilosulus*, Smith, from Oaxaca, but that has the thorax closely punctured.

Melissodes albocincta, sp. n.

♀.—Length about 10 mm.

Compact, black; antennae beyond the fourth joint ferruginous beneath; eyes pale grey; small joints of tarsi reddish; tegulae piceous, posteriorly paler and reddish. Wings faintly dusky, nervures and stigma dark brown; hind margins of abdominal segments (first narrowly, second broadly) colourless; pubescence greyish white, pale on vertex, but disk of scutellum with fuscous hair. Hair on outer side of tibiae and tarsi suffused with reddish, on inner side of hind basitarsi bright ferruginous; hind tibial scopa long, loose, and strongly plumose; hind margins of abdominal segments 2 to 4 with broad felt-like entire white hair-bands; black parts of first three segments exposed and shining, hardly punctured, but that of fourth covered with very short fuscous hair; fifth segment covered with dark chocolate hair, paler at margin, creamy-white at extreme sides; pygial plate narrow; mesothorax and scutellum highly polished and sparsely punctured, the mesothorax with a shallow median longitudinal groove.

Mexico (Baker collection, 2320). U.S. Nat. Museum.

This may be referable to *Xenoglossodes*; I have not ventured to extract the mouth-parts of the unique type. It certainly closely resembles *X. excurrens*, Ckll., differing principally by the white hind margins of abdominal segments. In my table of *Melissodes* (1905) it runs next to *M. martini*, Ckll., which it does not resemble.

Ptilothrix heterochrya, sp. n.

♀ (type).—Length about 10.5 mm.; anterior wing 7.7 mm. Black, with black and greyish-white hair; hair at sides of

abdominal segments 2 to 4 strongly washed with orange, which extends some distance along the bands on 3 and 4; fifth segment with dark fuscous hair in middle and orange at sides; flagellum obscure reddish beneath; mandibles chestnut-red in middle; clypeus prominent, bare, highly polished, with sparse distinct punctures; front and sides of face with white hair, but vertex with black; face broad; tegulæ rufo-piceous. Wings reddish. Hair of upper part of thorax greyish white, but a fuscous band across mesothorax and another across scutellum; lower half of mesopleura with dark chocolate hair; mesothorax highly polished, with sparse punctures. Legs dark reddish, their hair black; hind spurs curved at end.

Very close to *P. tricolor* (Friese), but much smaller, with narrower abdomen, more sparsely punctured disk of mesothorax, and smoother, more polished basal area of metathorax.

♂.—Antennæ hardly reddened beneath; face and lower part of cheeks with white hair, but the black hair of vertex also invades upper part of front; clypeus finely and rather closely punctured; thorax above with black hair, the margins of the mesothorax (broadly in front) with greyish white; pleura with black hair, but a tuft of greyish white just below tegulæ; thorax posteriorly with black hair; small joints of tarsi red; abdomen with black hair; a cuneiform orange patch at each side of third and fourth segments, a little of the same at sides of fifth; greyish-white hair at sides of first and second, and disks of these segments with very thin greyish-white hair, but hair on base of first segment black.

Carcarana, Argentina (*L. Bruner*). U.S. Nat. Museum.

The female (81) is the type; the male (56) seems to be correctly associated, but it differs much in appearance and may possibly belong to a different species.

Diadasia separata (Holmberg).

Carcarana, Argentina (*Bruner*, male 42, female 68).

This is *Teleutemnesta separata*, Holmberg. Holmberg described only the female; the male is similar, but the flagellum is only faintly reddish beneath, and there is no red hair at end of abdomen. The hind basitarsi are slender and curved.

Ceratina nautilana, Cockerell.

Vera Cruz, Mexico, Dec. 14, 1907 (*F. Knab*).

The wings are browner than usual.

Heriades sauteri philippinensis (Friese).

Philippine Islands; the type from Los Banos. A female from Manila (*Robert Brown*) is in U.S. Nat. Museum.

This differs from *H. sauteri* in the more finely punctured mesothorax and first abdominal segment.

Trigona itama, Cockerell.

Described from Singapore, but I cannot distinguish a specimen from Pelaboean Ratoe, Java (*Bryant & Palmer*), in U.S. Nat. Museum.

The black tegulæ distinguish it from *T. iridipennis*, Smith, which seems to be the common species in Java. The wings are fuliginous.

Nomia bantarica, sp. n.

♂.—Length nearly 8 mm.; anterior wing 6·7 mm.

Head black, with the clypeus (except sides above) and region of mouth ferruginous; mandibles very pale basally, dark chestnut-red apically; face densely covered with golden pile; vertex polished and shining; scape clear ferruginous; flagellum black above and red beneath; thorax black, with the tubercles, scutellum, and postscutellum clear red; upper border of prothorax densely covered with cream-coloured tomentum; mesothorax bare, dullish, the sculpture extremely fine; scutellum convex, not at all bigibbous; metathorax highly polished; tegulæ testaceous. Wings dusky, nervures and the large stigma dusky reddish; second s.m. small, third long. Legs clear light ferruginous, with concolorous hair; hind legs simple, but the femora and tibiæ rather stout. Abdomen smooth and shining, without hair-bands, ferruginous, with a large black patch on each side of second segment, third and fourth segments with very broad black bands. The tegulæ are not enlarged.

Bantar, Gebang, Java (*Bryant & Palmer*). U.S. Nat. Museum.

By its coloration it recalls *N. gribodoi*, Vachal, from Borneo, but that has the abdomen eight-spotted and the scutellum bigibbous.

Halictus leviventris, Pérez.

Tokyo, Japan (*Sasaki*, 149).

Pérez says this is of the size of *H. fallax*, which would be 7·5–8 mm., but he says that *H. discrepans*, 8 mm. long, is smaller than *leviventris*. The specimens of *leviventris*

before me are about 9 mm. long, anterior wing 7.5 mm. The first abdominal segment is highly polished and impunctate. The insect is in all respects closely allied to *H. sexnotatus*, Kirby.

Halictus occidentens, Smith.

Kiso-fukushima, Japan, July 27, 1914 (*Sasaki*, 174).

The lateral borders of posterior face of metathorax are sharply margined. The hind spur has broad, rounded, nodule-like teeth.

Halictus tsushimensis, n. n.

Halictus orientalis, Pérez, 1905 (not of Lepeletier, 1841).

Tsushima, Japan.

Allied to *H. occidentens*, but with more punctured abdomen and very smoky wings.

Halictus basicirus, sp. n.

♀.—Length about 8 mm.; anterior wing about 6.5 mm.

Black, including the legs and hind margins of abdominal segments; head longer than broad, but not oval; mandibles reddened at apex; head and thorax with abundant pale ochreous hair, that on postscutellum light ferruginous; clypeus shining and well punctured; mesothorax very densely punctured, but shining between the punctures; area of metathorax semilunar, rather short, with fine, regular, but rather wavy longitudinal plicæ; posterior truncation very hairy, not conspicuously defined; tegulæ piceous. Wings hyaline, stigma and nervures amber-colour. Legs with pale ochreous hair, a line of fuscous on outer side of hind tibiæ; hind spur very minutely nodulose, appearing simple under a lens. First abdominal segment polished and shining, minutely punctured all over, the base broadly and densely covered with long pale ochreous hair; remaining segments also shining and punctured, the bases of segments 2 to 4 with entire bands of ochreous-tinted tomentum; caudal rima fringed with pale ochreous hair.

Japan, marked 167 and 358, but what these numbers signify I do not know. U.S. Nat. Museum.

In the Japanese fauna it seems nearest to *A. japonicola*, Strand, but it is larger and does not show the microscopic sculpture between the punctures on mesothorax and first abdominal segment. It is very close to *H. perangulatus*, Ck!., from Formosa, but the posterior part of mesothorax is much more closely punctured.

Halictus japonicus, Dalla Torre.

Smith described the male under the preoccupied name *H. tarsatus*. I found the female in the British Museum collection, and, as Vachal himself suggested, it appears to be the same as *H. tenuicellus*, Vachal, which may be safely regarded as a synonym.

Halictus subopacus, Smith.

Soochow, China (*N. Gist Gee*, 118, 119).

Another species of the type of *H. basicirrus*, from which it is known by the dullish and closely punctured first abdominal segment.

Halictus poonaënsis, n. n.

Halictus torridus, Cameron, 1898 (not Smith, 1879).

Poona, India.

Halictus nusaënsis, Friese, in litt., 1914.

Halictus nigroviridis, Friese, 1914 (not Graenicher)

Java.

Halictus bryanti, sp. n.

♀.—Length about 8 mm. ; anterior wing 6 mm.

Black, robust, with unusually broad abdomen, the sides of which are parallel except at the ends ; hair of head and thorax scanty, dull white, the postscutellum with white tomentum ; head ordinary ; mandibles only faintly reddish at apex ; face thinly covered with pale hair ; clypeus with weak shallow punctures, the subapical middle depressed ; front dull, vertex shining ; flagellum very faintly brownish beneath ; mesothorax shining but not highly polished (the surface being microscopically tessellate), with small sparse punctures ; scutellum more polished, slightly bigibbous ; mesopleura almost entirely opaque ; area of metathorax short, with very distinct plicæ on its basal part ; posterior truncation shining, impunctate, sharply margined at sides ; tegulæ black, dark reddish in middle. Wings dusky ; nervures and stigma dark fuscous. Legs black, with pale hair, fuscous bands on outer side of middle and hind tibiæ ; hind spur with three very large obtuse spines. Abdomen shining, but the surface minutely lineolate, and with excessively minute punctures scattered all over ; bases of segments with dull white hair, conspicuous and dense at sides of second ; hind margins black ; segments 3 and 4 with rather obscure subapical hair-bands.

Buitenzorg, Java, March 1909 (*Bryant & Palmer*). U.S. Nat. Museum.

In Friese's table of Java *Halictus* (1914) this runs nearest to *H. thoracicus*, Friese, which Messrs. Bryant & Palmer also took at Buitenzorg, but the sculpture of the thorax is entirely different.

Halictus palmeri, sp. n.

♂.—Length about 5.5 mm.; anterior wing 5 mm.

Black, rather robust for a male; head and thorax with very scanty dull white hair; head ordinary; clypeus produced, wholly black, shining, with sparse punctures; front slightly shining, with fine punctures; flagellum very faintly brownish; mesothorax and scutellum very highly polished, with only microscopical sparse punctures; area of metathorax rather long, with very fine anastomosing plicæ, appearing dull and granular under a lens; tegulæ dark reddish. Wings dusky; stigma and nervures dark reddish. Legs black, tarsi reddish apically. Abdomen shining, impunctate, with thin pale hair on apical part, small patches of white hair at lateral bases of second and third segments.

Tjibodas, Mt. Gede, Java, alt. 4500 ft., Oct. 9, 1909 (*Bryant & Palmer*). U.S. Nat. Museum.

Distinct from the species previously described from Java by the highly polished mesothorax, without evident punctures.

Halictus gedensis, sp. n.

♀.—Length about 6.5 mm.; anterior wing 6 mm.

Black, the head and thorax with scanty dull white hair; head ordinary, rather broad; mandibles black; clypeus shining, sparsely punctured, it and the supraclypeal area distinctly longitudinally ridged in middle; front dull; flagellum very obscurely reddish beneath; mesothorax shining, but not highly polished, with small shallow punctures, and the surface microscopically tessellate between; scutellum with a median sulcus; postscutellum with long hair; area of metathorax poorly defined, with irregular plicæ on basal part; posterior truncation small; tegulæ reddish black. Wings dusky, long and ample; stigma and nervures dark brown. Legs black, with pale hair; hind spur white, with seven short spines. Abdomen shining, impunctate, without hair-bands; apical part and general surface more or less with pale hair, abundant on fifth segment.

Tjibodas, Mt. Gede, Java, alt. 5000 ft. (*Bryant & Palmer*). U.S. Nat. Museum.

Runs in Friese's table to the much larger *H. jacobsoni*, Friese.

Halictus erythrurus, Cockerell.

♀.—York, W. Australia (*O. H. Sargent*).

The specimen has two large black marks on the fifth abdominal segment, sublateral and lateral spots on the fourth, and lateral spots on the third. I have a specimen from the type-locality with lateral spots on the abdomen, so the peculiarity can hardly indicate a subspecies.

Halictus melanurus, sp. n.

♀.—Length about 4 mm.

Black, with the abdomen about as far as middle of third segment shining yellowish-ferruginous, beyond that very dark fuscous, almost black, basal half of first segment also dusky; labrum and mandibles except apex dark red; flagellum clear ferruginous beneath except at base; tegulae clear ferruginous. Legs dusky red, with the anterior tibiae in front and all the knees clear red; pubescence scanty, dull white. Abdomen without hair-bands. Wings clear, stigma and nervures ferruginous; outer r. n. and t.-c. much weakened; first r. n. meeting second t.-c. Head ordinary, face broad; clypeus shining; front dull; mesothorax moderately shining, very finely punctured; area of metathorax rough, with delicate plicae, the margin shining. Microscopical characters:—Front densely punctured, the surface between the punctures finely sculptured; mesothorax microscopically tessellate, anteriorly transversely lineolate; area of metathorax with wrinkled plicae; hind spur of the simple type (microscopically serrulate or spinulose).

York, W. Australia (*O. H. Sargent*). U.S. Nat. Museum.

Related to the Tasmanian *H. discclusus*, Ckll., but easily separated by the red tegulae. It is also a smaller species. The scopa on hind tibiae is rather short and thin, but beautifully plumose.

XII.—Notes from the Gatty Marine Laboratory, St. Andrews.—No. XLII. By Prof. M'INTOSH, M.D., LL.D., D.Sc., F.R.S., &c.

1. Preliminary Studies on *Filigrana*: *a*, Historical; *b*, Faunistic; *c*, Structural; *d*, General.
2. On *Harmothoe watsoni*, M'L., an var. *H. marphysæ*, M'L.

1. Preliminary Studies on *Filigrana*.

(a) HISTORICAL.

Filigrana, the subject of the following remarks, has probably been known to marine zoologists from very early